



US DEPARTMENT OF DEFENSE

BLAST INJURY RESEARCH PROGRAM COORDINATING OFFICE

Health Outcomes and Long-Term Care Following Extremity Injury

Amputation Injuries in Deployed Female Veterans from Operation Iraqi Freedom and Operation Enduring Freedom

Prior to the lifting of the combat restriction rule for women in 2013, female military members still suffered from combat-related injury due to the asymmetric and irregular nature of the conflicts in Iraq and Afghanistan. Due to the type of injury mechanisms in these conflicts, women also suffered traumatic amputations. Researchers at the NHRC identified from the EMED that 21 US Servicewomen sustained combat-related major limb amputations in Iraq and Afghanistan between March 2004 and December 2013. Injuries were characterized using Abbreviated Injury Scale and International Classification of Diseases, 9th Revision codes. To compare gender differences in the combat-related amputee population, a matched cohort of 21 men who had also suffered combat-related amputations were identified. Matching strategies used by the researchers resulted in pairs of female and male patients who had identical amputation injuries, had the same ISS, and were close in age. In the case of a complex injury profile, such as a patient who suffered a traumatic amputation plus open liver laceration or burns, the additional injuries were also matched to maintain similar injury profiles between the groups of women and men. After the two matched cohorts were ascertained, data on post-injury acute care utilization and current military status were collected. The median age of women and men was 25, with an average ISS of 16. Amputations originally identified in the female group were predominately in the lower extremities (81 percent). Blast events were responsible for all of the injuries. A median number of three acute care hospitalizations in the first year post-injury were seen in both genders. Although women averaged more acute care bed days in the first year post-injury than men (49.2 versus 44.5), and averaged less intensive care unit days (2.8 versus 4.1), no statistical differences were found, which possibly may be attributed to the small sample sizes. To date, 10 percent of the women remain on active duty compared with 24 percent of the men. Future studies will identify complications that arise in these severely injured populations, as well as investigating gender differences in mental health issues and quality-of-life outcomes after suffering combat-related injury. New and continued research in this area can inform the advancement of military medicine by identifying interventions and remedies of potential benefit to all Service Members. By recognizing gender differences in medical care usage and return to duty rates in the seriously injured Service Member, military leaders and medical



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planners can forecast care requirements throughout the continuum of medical care. This insight will promote individualized care, ensuring optimal outcomes for all combat-injured Service Members.